

WHAT IS CLAIMED IS:

1           1.       An open loop controller for a sampled grating distributed bragg reflector  
2 (SGDBR) laser, comprising:  
3           a table of voltages and current settings, each entry in the table corresponding to a  
4 separate operating point of the SGDBR laser, each entry in the table comprising:  
5                 a first mirror current;  
6                 a second mirror current;  
7                 a phase current; and  
8                 a gain current,  
9           the first mirror current, second mirror current, phase current, and gain current controlling at  
10 least one of a group comprising: an optical output power and an output wavelength of the SGDBR  
11 laser; wherein when the controller is given a selected optical power and output wavelength, the  
12 controller selects an entry from the table to control the laser at substantially the selected optical  
13 power and output wavelength.

1           2.       The controller of claim 1, further comprising a temperature regulator.

1           3.       The controller of claim 2, wherein the temperature regulator regulates the  
2 SGDBR laser to a fixed, pre-selected temperature.

1           4.       The controller of claim 1, wherein the table is filled with unique values for  
2 each SGDBR laser.

1           5.       The controller of claim 4, wherein the unique values are determined using a  
2 calibration routine.

1           6.       The controller of claim 1 wherein each entry in the table further comprises  
2 an amplifier current.